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Parting Agent

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Definition: A lubricant, often wax, silicone or fluorocarbon fluid, used to coat a mold cavity to prevent the molded piece from sticking to it, and thus to facilitate removal of the piece from the mold. Also a material applied to one or both surfaces of a sheet to prevent blocking. Often packaged in aerosol cans for convenience in application. Also known as RELEASE AGENT, MOLD LUBRICANT and MOLD RELEASE AGENT.

Related Terms

- Mold Release Agent

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Wax Casting Information - Jewelry Making
Wax Casting Information - Jewelry Making
Make a Basic Molded Pillar Candle

surface-active agent

Encyclopædia Britannica Article

also called ***Surfactant***, substance such as a detergent that, when added to a liquid, reduces its surface tension, thereby increasing its spreading and wetting properties. In the dyeing of textiles, surface-active agents help the dye penetrate the fabric evenly. They are used to disperse aqueous suspensions of insoluble dyes and perfumes.

The surface-active molecule must be partly hydrophilic...

surface-active agent... *(75 of 146 words)*

To cite this page:

MLA style:
"surface-active agent." Encyclopædia Britannica. 2007. Encyclopædia Britannica Online. 8 Jan. 2007 <http://www.britannica.com/eb/article-9070437>.

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surface-active agent. (2007). In *Encyclopædia Britannica*. Retrieved January 8, 2007, from Encyclopædia Britannica Online: http://www.britannica.com/eb/article-9070437

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Surfactant

From Wikipedia, the free encyclopedia

This article is about surfactants in general. For the compound produced by alveolar cells, see pulmonary surfactant.

Surfactants are wetting agents that lower the surface tension of a liquid, allowing easier spreading, and lower the interfacial tension between two liquids.

Contents

Origin of term

The term surfactant is a blend of "**Surf**ace **a**ctive **a**gen**t**". Surfactants are usually organic compounds that are amphiphilic, meaning they contain both hydrophobic groups (their "tails") and hydrophilic groups (their "heads"). Therefore, they are soluble in both organic solvents and water. It was coined by Antara Products in 1950.

Operation and effects

Surfactants reduce the surface tension of water by adsorbing at the liquid-gas interface. They also reduce the interfacial tension between oil and water by adsorbing at the liquid-liquid interface. Many surfactants can also assemble in the bulk solution into aggregates. Some of these aggregates are known as micelles. The concentration at which surfactants begin to form micelles is known as the critical micelle concentration or CMC. When micelles form in water, their tails form a core that is like an oil droplet, and their (ionic/polar) heads form an outer shell that maintains favorable contact with water. When surfactants assemble in oil, the aggregate is referred to as a reverse micelle. In a reverse micelle, the heads are in the core and the tails maintain favorable contact with oil.

Surfactants are also often classified into four primary groups; anionic, cationic, non-ionic, and zwitterionic (dual charge).

In Index Medicus and the National Library of Medicine (NLM, USA Dept. of Health and Human Services), "surfactant" is reserved for the meaning *pulmonary* surfactant (see "alveoli" link below). For the more general meaning, "surface active agent" is the heading.

Thermodynamics of the surfactant systems are of great importance, theoretically and practically. This is because surfactant systems represent systems between ordered and disordered states of matter. Surfactant solutions may contain an ordered phase (micelles) and a disordered phase (free surfactant molecules and/or ions in the solution).

Ordinary washing up detergent for example will promote water penetration in soil but the effect would only last a few days (although many standard laundry detergent powders contain levels of chemicals such as sodium and boron which can be damaging to plants and these should not be applied to soils). Commercial soil wetting agents will continue to work for a considerable period, but they will eventually be degraded by soil micro-organisms.

They can, however, interfere with the life-cycles of some aquatic organisms, and care should be taken to prevent run off of these products into streams, and excess product should not be washed down gutters.

Applications

Surfactants play an important role in many practical applications and products, including:

- Detergents
- Fabric softener
- Emulsifiers
- Paints
- Adhesives
- Inks
- Alveoli
- Wetting
- Ski Wax
- Snowboard Wax
- Foaming
- Defoaming
- Laxatives
- Agrochemical formulations
  - Herbicides
  - Insecticides
- Quantum dot coating
- Biocides (Sanitizers)
- Hair Conditioners (after shampoo)
- Spermicide (Nonoxynol 9)

Classification

A surfactant can be classified by the presence of formally charged groups in its head. A nonionic surfactant has no charge groups in its head. The head of an ionic surfactant carries a net charge. If the charge is negative, the surfactant is more specifically called anionic; if the charge is positive, it is called cationic. If a surfactant contains a head with two oppositely charged groups, it is termed zwitterionic.

Some commonly encountered surfactants of each type include:

- Ionic
  - Anionic (based on sulfate, sulfonate or carboxylate anions)
    - Sodium dodecyl sulfate (SDS), ammonium lauryl sulfate, and other alkyl sulfate salts
    - Sodium laureth sulfate, also known as sodium lauryl ether sulfate (SLES)
    - Alkyl benzene sulfonate
    - Soaps, or fatty acid salts (see acid salts)
  - Cationic (based on quaternary ammonium cations)
    - Cetyl trimethylammonium bromide (CTAB) a.k.a. hexadecyl trimethyl ammonium bromide, and other alkyltrimethylammonium salts
    - Cetylpyridinium chloride (CPC)
    - Polyethoxylated tallow amine (POEA)
    - Benzalkonium chloride (BAC)
    - Benzethonium chloride (BZT)
- Zwitterionic (amphoteric)
  - Dodecyl betaine
  - Dodecyl dimethylamine oxide

- Cocamidopropyl betaine
- Coco ampho glycinate

- Nonionic
  - Alkyl poly(ethylene oxide)
  - Alkyl polyglucosides, including:
    - Octyl glucoside
    - Decyl maltoside
  - Fatty alcohols
    - Cetyl alcohol
    - Oleyl alcohol
  - Cocamide MEA, cocamide DEA, cocamide TEA

Retrieved from "http://en.wikipedia.org/wiki/Surfactant"

Categories: Colloidal chemistry | Cleaning product components | Surfactants